COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Valley Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Molson Coors Beverage Company USA LLC
Rockingham County, Virginia
Permit No. VRO81012

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Molson Coors - Shenandoah Brewery has applied for a Title V Operating Permit for its Rockingham County facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact: _____*DRAFT*_____ Date: _____
Debbie D. Medlin

Air Permit Manager: _____ Date: _____
Janardan R. Pandey, P.E.

FACILITY INFORMATION

Permittee
Molson Coors Beverage Company USA LLC
5135 South Eastside Highway
Elkton, Virginia 22827

Facility
Molson Coors – Shenandoah Brewery
3.5 miles south of Elkton on U.S. 340
Rockingham County, Virginia

SOURCE DESCRIPTION

NAICS Code: 312120 – Malt Beverage Manufacturer

Molson Coors Beverage Company USA LLC (Molson Coors) manufactures malt beverages. Operations at the facility include a brewery (grain handling, brewing, fermenting, aging, and conditioning processes), packaging (bottles, cans, and kegs and carton assembly and label application), and a wastewater treatment plant. In addition, there are auxiliary processes supporting the operations.

Molson Coors is a Title V major source of nitrogen oxides (NO_X) and volatile organic compounds (VOC). This source is located in an attainment area for all pollutants, and is a PSD minor source. The facility is currently permitted under a minor new source review permit approved on June 10, 2011 as amended November 18, 2013, February 3, 2016, July 12, 2017, and October 5, 2017. The existing Title V operating permit underwent an administrative amendment on June 9, 2020; the Title V permit expired on June 30, 2021. Because the application was timely and complete, the application shield is in effect.

The facility is subject to following subparts in 40 CFR Parts 60 and 63:

Part 60: Dc, JJJJ
Part 63: ZZZZ

COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit (June 9, 2021), has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

CHANGES TO THE EXISTING TITLE V PERMIT

The following changes were made to the Title V permit since its last renewal on July 1, 2016: two significant amendments to the minor NSR (mNSR) Permit, one dated July 12, 2017, and the other, October 5, 2017, and a Title V administrative amendment on June 9, 2020.

The listed Permit revisions made to the mNSR, and subsequently to the TV permit, are as follows:

<u>mNSR Significant Amendment Changes - July 12, 2017</u>

- An increase in volatile organic compounds (VOC) emission limitations for EU 27, Packaging Fillers Process. EU 27 – Packaging Fillers Process consists of:

  - Draft Bottle Filling Line,
  - Sterilized Can Line, and
  - 8-Lane Centramatic Keg Line

  .

  This permitting action was a result of voluntary testing for the keg line operation. The emission factor determined from the test significantly exceeded the historical AP-42 emission factor for the keg line operation. Molson Coors requested an increase in VOC emissions for the Packaging Fillers Process to account for the corrected emission factor. The changes in this permitting action were as follows:

  - Revise the emissions factor used for the keg line of the Packaging Fillers Process (EU #27) from 0.69 lb/1000 bbls to 36.61 lb/1000 bbls;

  - Increase the annual VOC emission limit for EU 27 by 23.74 tpy, from 47.3 tpy to 71.04 tpy; and

  - Restrict the keg line production to 1.6 million barrels per year. The total production of 10 bbl (from can, bottle and keg) did not change.

<u>mNSR Significant Amendment Changes - October 5, 2017</u>

- Molson Coors sought to install new filler equipment for 24 ounce cans, creating a new Can Line 5. Can Line 5 shared the same pasteurizer as Bottle Line 5. In sharing the pasteurizer, the Bottle Line 5 and Can Line 5 were restricted to operating one filler at a time, either for Bottle Line 5 or Can Line 5. This limited the capacity of Can Line 5 to that of Bottle Line 5, 1.8 million barrels. This action did not increase the overall packaging capacity for the facility.

<u>TV Administrative Amendment – June 9, 2020</u>

Changes to the permit were limited to a name change to Molson Coors – Shenandoah Brewery.

Permit Revisions

Permit revisions made to the existing TV permit, are as follows:

- Emission EUs: The Emission EU List was updated, as follows:

  - Remove the Conveyor Lubricants (EU #28) from the permit since the lubricants used have no VOC content.

  - Removed EU ID 16 (Lime Storage and Handling) from the permit. EU ID 16 has been removed from the facility.

- Emission EUs - Updated Stack Designation – There are currently a total of thirteen stacks associated with the various packaging EUs, specifically Packaging Fillers Process, compared to the nine stacks that were listed in the previous Title V application. The 13 stacks are referenced as "S-P-1" through "S-P-13". The breakdown is as follows:

  S-P-1 – through S-P-5 – stacks for:
  - Can Line 1 (1 stack)
  - Can Line 2 (1 stack)
  - Can Line 3 (2 stacks)
  - Keg Line (1 stack)

  S-P-6 through S-P-9 – stacks for:
  - Bottle Line 3 (2 stacks)
  - Bottle Line 4 (2 stacks)

  S-P-10 through S-P-13 – stacks for:
  - Bottle Line 5 (1 stack)
  - Can Line 5 (2 stacks)
  - New CO2 exhaust blower from the seamer on Can Line1

- Global Changes: All references to the facility's mNSR permit are changed from "6/10/11 Permit as amended 11/18/13, and 2/3/16", to "6/10/11 Permit as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17", to reflect the most recent amendments to the NSR permit. Additionally, minor changes were made to make the general conditions consistent with current agency boilerplate.

- Facility-Wide Conditions: No changes have been made, except minor changes to boilerplate language.

EMISSION UNITS

Please refer to the Emission Units table in the Title V permit.

EMISSIONS INVENTORY

Emissions from the facility in 2020 are summarized in the following tables.

2020 Criteria Pollutant and Greenhouse Gas Emissions in Tons/Year

Emissions	VOC	CO	SO_2	PM_{10}	$PM_{2.5}$	NO_X
Total	67.43	39.14	2.29	3.18	1.42	14.02

1. Boilers 1, 2, and 3 were not fired during the 2020 Emissions Inventory year.
2. NO_X emissions were determined from the CEMS installed on the boilers.

Pollutant	2020 Hazardous Air Pollutant Emission (tons/yr)
None	

FUEL BURNING EQUIPMENT REQUIREMENTS - Emission Unit IDs 1, 2, 3, 4, and 5

Citations

The following citations from the Virginia Administrative Codes identify the underlying authorities to implement the specific requirements determined to be applicable in the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17:

9 VAC 5-50-80 New Source Standard for Visible Emissions

Limitations – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

Condition 1 – Nitrogen oxide (NO_X) emissions from the 97 Million Btu/hr boiler (EU ID 4) shall be controlled by low NO_X burners (BACT)

Condition 2 – NO_X emissions from the 97 Million Btu/hr boiler (EU ID 5) shall be controlled by low NO_X burners and flue gas recirculation. (BACT)

Condition 19 – Approved fuel for all boilers (EU IDs 1-5) is natural gas.

Condition 20 – Short term criteria pollutant emission limits for the 18 Million Btu/hr boilers (EU IDs 1-3). (BACT)

Condition 21 – Annual criteria pollutant emission limits for the 18 Million Btu/hr boilers (EU IDs 1-3). (BACT)

Condition 22 – Short term criteria pollutant emission limits for the 97 Million Btu/hr boilers (EU ID 4). (BACT)

Condition 23 – Short term criteria pollutant emission limits for the 97 Million Btu/hr boilers (EU ID 5). (BACT)

Condition 24 – Annual criteria pollutant emission limits for the 97 Million Btu/hr boilers (EU IDs 4 and 5). (BACT)

Condition 25 – Visible emission limit of five-percent opacity for the 97 Million Btu/hr boilers, except for one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity. (BACT)

Condition 56 – Boiler emissions shall be controlled by proper operation and maintenance. Training shall be provided and written operating procedures and a maintenance schedule shall be available.

A visible emission limitation for the three 18 Million Btu/hr boilers (EU IDs 1-3) was not

included in the minor NSR permit issued on 6/10/11 Permit as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17, nor in the previous minor NSR permits superseded by this permit. The visible emission limitation included in the Title V permit is pursuant to 9 VAC 5-50-80.

A condition is in the Title V permit restricting EU ID 40 (guardhouse generator) to the use of propane as the sole fuel.

Monitoring

The monitoring and recordkeeping requirements in Conditions 14, 15, 48, 49, and 50 of the NSR permit have been modified to meet Part 70 requirements.

Conditions 14 and 15	–	The fuel gas flow to all boilers (EU IDs 1-5) shall be fitted with devices to continuously measure and record the fuel gas flow. This requirement has been used to satisfy the periodic monitoring requirements for the fuel throughput limits, which were discontinued with the minor NSR permit last amended on 2/3/16; propane was discontinued as a boiler fuel for EUs 1-5, leaving natural gas as the sole fuel. (BACT)
Conditions 48, 49, and 50	–	NOX emissions shall be measured and recorded by continuous emission monitoring systems (CEMS) on the two 97 Million Btu/hr boilers (EU IDs 4 and 5). This requirement will satisfy the periodic monitoring requirements for the NOX emission limits in Conditions 22 - 24. The data collected shall be used to determine compliance with these NOX emission limitations.

The hourly emission limits in Conditions 22, 23, and 24 are based on the capacity of the boilers. Therefore, if the boilers are operated at or below capacity, the hourly emission limits will not be exceeded.

With the exception of NO_X emissions from EU IDs 4 and 5, the following equation and emissions factors will be used to determine actual emissions from the operation of the five boilers. NO_X from these EUs is determined through a Continuous Emissions Monitoring System (CEMS).

$$E = F \times N$$

Where: E = emission rate (lb/time period)
F = pollutant specific emission factor, provided below
N = fuel consumed (million ft3/time period for natural gas and 1000 gal/time period for propane)

Table 1: Emission Factors - EU IDs 1, 2, and 3
18 Million Btu/hr heat input rating, each

Pollutant	Emission Factor (1)

	Natural Gas (lb/million ft^3)
PM	7.6
PM-10	7.6
PM-2.5	7.6
SO_2	0.6
CO	84
NO_X	100
VOC	5.5

Table 2: Emission Factors - EU IDs 4 and 5, 97 Million Btu/hr heat input rating, each

Pollutant	Emission Factor (1)
	Natural Gas (lb/million ft^3)
PM	7.6
PM-10	7.6
PM-2.5	7.6
SO_2	0.6
CO	84
NO_X – EU ID 4 (3)	50
NO_X – EU ID 5 (2), (3)	32
VOC	5.5

(1) Emission Factors: Natural Gas from AP-42, Tables 1.4-1 and 1.4-2 (07/98); EU ID 4 uses low NO_X burners for control. The emission factor for natural gas burning reflects the use of these controls.
(2) EU ID 5 uses low NO_X burners and flue gas recirculation. The emission factor for natural gas burning reflects the use of these controls.
(3) Although NO_X emission factors are provided for Boilers 4 and 5, these EUs are equipped with NO_X CEMS; actual NO_X emissions data is provided by the CEMS monitors.

The annual emission limits in Conditions 21 and 24 were determined from the annual capacity of the boilers with natural gas as the sole throughput at 8760 hours. Therefore, there is no need to require a throughput listing.

The opacity requirements in the NSR Condition 25 for the 97 Million Btu/hr boilers and those established for the 18 Million Btu/hr boilers pursuant to 9 VAC 5-50-80 will be met through the use of the required fuel and through proper operation and maintenance. The operating procedures and maintenance schedule requirements will ensure compliance with the opacity limitations and satisfy the periodic monitoring requirement for the boilers.

Recordkeeping

General Title V retention of records is 5 years. Some of the records required of the applicable NSPS have 2-year retention timeframes. For the purpose of Title V, all records relevant to this permit and facility must be maintained for 5 years.

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include the CEMS data collected to determine compliance with the NO_X emission limits.

Compliance Assurance Monitoring (CAM) Plan

CAM does not apply to the boilers; none of the boilers has potential pre-controlled emissions of any pollutant that exceed major source threshold levels for that pollutant.

Testing

The permit does not require source tests for the fuel-burning equipment. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The Title V permit includes semi-annual compliance reporting, excess emission reporting, and the occurrence of any malfunctions or permit deviations. In addition to these reporting requirements, the following reporting requirements are also required by the Title V permit:

Condition 52 of the minor NSR permit issued 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17 requires quarterly reporting within 30 days of the end of the calendar quarter for the 97 Million Btu/hr boilers. The reporting must include: the source operating time (in hours); for each boiler operating day, the information required under 40 CFR 60.49b (g)(1), (g)(2), and (g)(3); the quality assurance information required under 40 CFR 60.49b (g)(10); the dates and times of all outages of the NO_X CEMS, with reasons for the outages and corrective action taken; and the calculated hourly NO_X emission rates (in lb/hr). This information is to be sent to both the DEQ and to the EPA.

Notifications

There are no notifications outstanding.

Federal Standards Applicability – EU ID 40 (Propane-fired Generator)

EU ID 40, the guardhouse propane-fired generator, is currently not subject to any of the requirements of 40 CFR 60, Subpart JJJJ (NSPS for Stationary Spark Internal Combustion Engines). Based on the manufacture date, the construction date, and the maximum engine power, there are no compliance requirements for the generator. However, pursuant to §60.4230 (5), if the EU is modified or reconstructed as defined under 40 CFR 60, Subpart A, the EU will become subject to the applicable requirements of Subpart JJJJ.

Applicability of 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines) is limited to demonstrating compliance with the applicable requirements of

40 CFR 60, Subpart JJJJ, pursuant to §63.6590 (c).

Streamlined Requirements

The 97 Million Btu/hr boilers (EU IDs 4 and 5) are subject to 9 VAC 5-50-80, Standard for Visible Emissions. This regulation limits visible emissions from the boilers to 20 percent opacity except for one six-minute period where visible emissions may not exceed 30 percent opacity. The minor NSR permit limits the visible emissions from the boilers to five percent opacity (Condition 25). Compliance with the minor NSR requirement will ensure that the boilers are also in compliance with 9 VAC 5-50-80. Therefore, the opacity requirements of 9 VAC 5-50-80 have not been included in the Title V permit for EU IDs 4 and 5.

All five boilers (EU IDs 1-5) are subject to the particulate matter (PM), sulfur dioxide (SO_2), and visible emissions (opacity) requirements of 9 VAC 5-40-880, *et. seq.*, Emissions Standards for Fuel Burning Equipment (Rule 4-8). The minor NSR permit limits for PM, SO_2, and opacity are more stringent than the limits in Rule 4-8. Therefore, compliance with the minor NSR requirements will ensure that the boilers are in compliance with the requirements of Rule 4-8.

Condition 26 of the minor NSR permit, "Requirements by Reference" for 40 CFR 60, Subpart Dc, has not been included because all applicable requirements of the subpart have been incorporated into the Title V permit.

BREWERY REQUIREMENTS – EU IDS 10, 20, 23, 24, 25, 26, AND 38

Limitations – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. The condition numbers reflect those in the minor NSR. A copy of the mNSR permit is attached as *Attachment C*.

Condition 3 – Particulate Matter emissions (PM/PM-10) from the Barley Malt Receiving System, including grain receiving by railcar (choke unloading) and headhouse and internal handling, and the Barley Malt Storage, Screening, and Milling System (EU ID 10) shall be controlled by fabric filters. (BACT)

Condition 5 – Volatile Organic Compound (VOC) emissions from the Conditioning Process (EU ID 25) shall be controlled by maintaining closed vessels under CO_2 pressure during storage and cleaning activities. (BACT)

Condition 28 – Annual throughput limitation of barley malt.

Condition 29 – Short term and annual PM and PM-10 emission limitations for the Barley Malt Receiving System and the Barley Malt Storage, Screening, and Milling System (EU ID 10). (BACT)

Condition 30 – Annual production limit – packaging fillers

Condition 31 – Annual production limitation of beer, 8-Lane Centramatic Keg Line.

Condition 32 – Monthly and annual VOC emission limitations for the Brewing Process (EU ID 20), Fermentation (EU ID 23), Maturation (EU ID 24), Conditioning (EU ID 25), By-products Handling (EU ID 26), and the CO_2 Recovery System (EU ID 38). (BACT)

Condition 33 – Monthly and annual PM and PM-10 emission limitations for the Brewing Process (EU ID 20). (BACT)

Condition 34 – Visible emission limit of five percent opacity from all fabric filters. (BACT)

The CO_2 Recovery system emission factor (EF) of 0.0304 lb/hr was calculated from the results of a stack test that Molson Coors conducted at its Milwaukee brewery in 2011. Similarities between the carbon dioxide recovery systems at the two facilities are sufficient to allow test data from the Milwaukee facility to be used at the Shenandoah facility. Input to the recovery system is CO_2 collected from the fermentation and aging tanks. All collected CO_2 is treated by the recovery system to remove impurities before re-use. Although the systems have different manufacturers, both use two (2) carbon adsorbers to remove VOC contaminants. One adsorber is maintained in adsorbing mode while the other is regenerating. Recovery is accomplished by heating the carbon media, at which time CO_2 is purged through the carbon. VOCs are only emitted during the recovery cycle, which occurs over 8760 hours. The emission factor applies to the entire recovery system, and not each EU. When one EU is regenerating, the other is operating.

> EF (lb/hr) * 8 recovery hrs/8 operating hrs * 8760 hrs/yr * ton/2000 lb = emissions (tpy)
>
> 0.0304 lb/hr * 1 * [(8760 hrs/yr)/(2000 lb/ton)] = 0.133 tpy

Recovery of the carbon media at the Elkton facility takes eight hours. Although the Milwaukee brewery's CO_2 recovery cycle is longer, at 12 hours, it processes 78,000 pounds of CO_2 during the cycle, as contrasted with the Elkton brewery's 45,000 pounds of CO_2 per eight-hour cycle. Recovery at the Elkton plant is 40% more frequent than the Milwaukee plant, but the carbon bed is exposed to 40% less CO_2. Therefore, proportionality is maintained, and the emission factor is likely conservative of the actual emissions.

No emission limit is listed in the minor NSR last amended on 10/5/17 for EU ID 38 because of the magnitude of the value, 0.133 tpy. DEQ policy typically does not list emission limits for values less than 0.5 tpy.

No visible emission limit was included in the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17 for the operations emitting only VOC, which are brewing, fermentation, maturation, conditioning, and by-products handling. A visible emission

limit of 20 percent opacity except for one six-minute period where visible emissions may not exceed 30 percent was established pursuant to 9 VAC 5-50-80.

Monitoring

Fabric filters must be equipped with a device to continuously measure the differential pressure across the fabric filter (Condition 18).

The PM limits are based on the production of beer and barley malt throughput allowed in the permit. Likewise, the VOC limits established are based on the production and throughput limits allowed in the permit. If Molson Coors does not violate the beer production limit or throughput limits contained in the permit, the PM and VOC emission limits will not be violated. Recordkeeping demonstrating the total amount of beer produced and barley malt throughput can be used to demonstrate compliance with the PM and VOC emission limits, satisfying the periodic monitoring requirement.

Molson Coors is required to maintain records using DEQ-approved emission factors to demonstrate compliance with the PM and VOC limits established for the grain-handling and brewing processes in the permit. Actual emissions from these processes shall be calculated using the procedures outlined below.

$$E = TxEFx\frac{100-C}{100}$$

Particulate Matter (PM) Monitoring – EU ID 10 Grain Handling System

Where: E = VOC emission rate (lb VOC/time period)
T = Throughput to process (EUs are dependent on process)
EF = Process specific VOC emission factors as provided in the table below
C = control efficiency, as applicable (%)

Table 3: Emission Factors for EU ID 10 – Grain Handling System

Process Step	Emission Factor (EF)		EF Source	EUs
	PM	PM-10		
Grain Receiving – Railcar	0.032	0.0078	AP-42, Table 9.9.1-1 (5/98)	lb/ton grain
Headhouse and Internal Handling	0.061	0.034	AP-42, Table 9.9.1-1 (5/98)	lb/ton grain
Malt Storage	0.14	0.14	AP-42, Table 9.9.7-1 (1/95) for Starch Storage Bin	lb/ton grain
Malt Screening	0.643	0.161	AP-42, Section 9.9.1 (5/98), Background Document	lb/ton grain
Malt Milling	1.20, controlled	1.20, controlled	AP-42, Table 9.9.1-2 (5/98), for Animal	lb/ton grain

			Feed Mill, Hammermill	

Volatile Organic Compounds (VOC) Monitoring

$$E = TxEFx\frac{100-C}{100}$$

Where: E = VOC emission rate (lb VOC/time period)
T = Throughput to process (EUs are dependent on process)
EF = Process specific VOC emission factors as provided in the table below
C = control efficiency, as applicable (%)

Table 4: Emissions Factor Sources – EU IDs 20, 23, 24, 25, 28, and 38

Process (EU ID)	Emission Factor (EF)	EF Source	EUs
Brewing (20)	1.02	AP-42, Table 9.12.1-2 (10/96) [1]	lb/1000 bbl of beer
Fermenting (23)	1.05	Coors, Golden, CO stack test	lb/1000 bbl of beer
Maturation (24)	0.57	AP-42, Table 9.12.1-2 [2]	lb/1000 bbl of beer
Conditioning – Fill-on-vent (25)	0.174	Facility study conducted on 8/20/96	lb/1000 lb of CO_2
Conditioning – Evacuation (25)	1.05	Coors , Golden, CO stack test, 7/9/97	lb/1000 bbl evacuated
By-products Handling (26)	N/A	Emissions determined from EPA TANKS 4 program.	lb/1000 bbl of waste beer
CO_2 Recovery System (38) [3]	Total VOC – 0.0304	Stack test data, Molson Coors Milwaukee Brewery, 2011	lb/hr [4]

1. Emission factor is the total of the emissions factors for Mash-in, Lauter Tun, Combi Kettle, and Trub Tanks as found in AP-42.
2. Aging Tank emission factor.
3. Emissions from the CO_2 Recovery System occur only during regeneration. VOC emissions are for acetaldehyde (also listed as a HAP) and ethyl acetate (VOC only). Emissions of acetaldehyde are below the modeling exemption thresholds.
4. Emissions from the CO_2 Recovery System are calculated as follows:
(EF) x 8 regeneration hours/8 operating hours = emissions (lb/hr)

Compliance Assurance Monitoring (CAM) Plan

The following processes identified under EU ID 10, Grain-handling System, are controlled by fabric filters and have the pre-control emissions of PM/PM-10 exceeding major source

thresholds. These processes are subject to CAM:

- Barley Malt Receiving System, including grain receiving by railcar (choke unloading) and headhouse and internal handling

- Barley Malt Storage, Screening, and Milling System

None of the remaining brewing processes (EU IDs 20, 23-26, and 38) use add-on control devices for emissions controls. Therefore, CAM is not applicable to these processes.

The CAM Plan (*Attachment A*) for EU ID 10 fabric filters includes the following:

Indicator 1 – Visible emissions were selected as a performance indicator because they are indicative of good operation and maintenance of the fabric filters. When the fabric filters are operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate matter control device; therefore, the presence of visible emissions is used as a performance indicator.

Indicator 2 - An excursion is defined as the presence of visible emissions, unless the facility chooses to conduct a Method 9 VEE, where an excursion is defined as an average opacity of five percent during any one six-minute period in any hour. Regardless of which option the facility chooses, a Quality Improvement Plan (QIP) shall be developed if two excursions per each control device occur in a two-week period, during weekly monitoring, or if one excursion occurs during monthly monitoring.

Indicator 3 – Monthly external filter inspections and annual internal filter inspections are required by qualified personnel. Inspections will alert the facility of bag deterioration and necessary corrective maintenance to obtain the proper control efficiencies in order to meet emission limitations.

Recordkeeping

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include throughputs of all raw materials, total amount of beer brewed, total amount of waste beer, total amount of CO_2 consumed, emissions data, and necessary records required by the CAM plan.

Testing

The permit does not require source tests for the brewing process. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Reporting

The facility is required to submit CAM reports as part of the Title V semi-annual monitoring reports required in the General Conditions. The reports shall include, at a minimum: summary information of excursions, monitor downtime, and action taken to implement a QIP, if required during the reporting period.

PACKAGING REQUIREMENTS – EU IDS 27, 29 - 32

Limitations – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

Condition 6 – Volatile organic compound (VOC) emissions from the Packaging Fillers Process (EU ID 27) shall be controlled by beer dispensing technology
beer spillage management practices. (BACT)

Condition 7 – Volatile organic compound (VOC) emissions from product marking (EU ID 29) shall be controlled by the use of the current low-VOC content product marking inks and makeup cleaners. The facility is required to evaluate new, low VOC-containing inks and make-up cleaners as they become available. (BACT)

Condition 8 – VOC emissions from carton assembly (EU ID 30) and bottle label application (EU ID 31) shall be controlled by the use of ultra-low solvent based adhesives (containing less than 0.01 percent by weight VOC). (BACT)

Condition 9 – VOC emissions from the Packaging Defill Process (EU ID 32) shall be controlled by the use of a water spraying system. (BACT)

Condition 30 – Annual production limitation of beer through packaging, which consists of the Can Lines 1, 2, 3, and 5; Bottle Lines 3 and 4, the Aluminum Bottle Line 5, and the 8-Lane Centramatic Keg Line.

Condition 31 – The annual production limitation of the production of beer through the 8-Lane Centramatic Keg Line.

Condition 32 - Monthly and annual VOC emission limitations for the Packaging Fillers Process (EU ID 27), Product Marking (EU ID 29), Carton Assembly (EU ID 30), Label Application (EU ID 31), and the Packaging Defill Process (EU ID 32). (BACT)

Changes to Packaging Fillers Process (EU ID 27)

In two NSR actions (07/12/17 and 10/05/17) since the last Title V permit renewal, Molson Coors made changes to EU 27, the Packaging Fillers Process. The Packaging Fillers Process consists of the:

- Draft Bottle Filling Line,
- Sterilized Can Line, and
- 8-Lane Centramatic Keg Line

The changes to the Packaging Fillers Process consist of an increase in volatile organic compounds (VOC) emissions limitations, resulting from voluntary testing completed for the Keg Filling Line (keg line) operation. The keg line process includes filling quarter- and half-kegs with finished product (beer). Each keg is filled upside down with little beer leakage. The beer contains ethanol, which is the VOC. The VOC is exhausted through ductwork that leads to the roof, where emissions exit into the atmosphere. There are two VOC emissions points (as exhaust ducts) on the roof. The first is a Centramatic Drain Exhaust that contains carbon dioxide (CO_2) and potential VOC (beer foam) and exhausts into the atmosphere via a fan on the roof. The second exhaust is from the Keg Surge / Supply tank that provides beer to the keg line and vents through a water-filled knock vessel and then vents to the roof and into the atmosphere. The second exhaust is only expected to have flow during cleaning cycles, not during normal operations.

The objective of the voluntary testing, a stack test conducted on October 26, 2016 at Molson Coors – Shenandoah Brewery (then named Millers Coors – Shenandoah Brewery) was to quantify VOC emissions (as ethanol) from the exhausts of the keg line using EPA Method 25 A for total hydrocarbons (THC).

mNSR Permit – July 12, 2017

The emission factor determined from the October 26, 2016 stack test, 36.61 lb/1000 barrels (bbls), significantly exceeded the historical AP-42 emission factor for the keg line operation; the AP-42 emission factor (AP-42 Table 9.12.1-2 (10/96)) for the keg line operation is 0.69 lb/1000-barrels (bbls). In a July 12, 2017 mNSR permitting action, Molson Coors requested an increase in the emission factor for the keg line; the emission factor would be increased from 0.69 lb/1000 bbls to 36.61 lb/1000 bbls. The permitting action also included a corresponding increase in VOC emissions for EU ID 27 from 47.3 tpy to 71.04 tpy in the mNSR permit (Condition 32); said permit accounts for the corrected emission factor in calculating emissions from the EU. EU ID 27 contains the keg line, the sterilized can line, and the draft bottle line. This VOC emissions increase from 47.03 tpy to 71.04 tpy from the EU ID 27 represents a significant decrease from the historical 140 tpy VOC emission limit.

Finally, the keg line production was restricted to 1.6 million barrels per year (Condition

31 of the mNSR permit last amended on 10/5/17). The existing total production from the Packaging Fillers Process (EU ID 27) for the cans, bottles, and kegs remains the same at 10 million barrels per year (Condition 30).

mNSR Permit – October 5, 2017

Molson Coors has installed new filler equipment for 24 ounce cans, creating a new Can Line 5. Can Line 5 shares the same pasteurizer as Bottle Line 5. In sharing the pasteurizer, the Bottle Line 5 and Can Line 5 are restricted to operating one filler at a time, either for Bottle Line 5 or Can Line 5. This limits the capacity of Can Line 5 to that of Bottle Line 5, 1.8 million barrels.

EU ID 27 has a throughput capacity of 17,855,564 barrels of beer. The addition of Can Line 5 does not increase the throughput capacity, because the addition of the filling equipment for Can Line 5 is physically limited to run only when the Bottle Line 5 does not. Therefore, there is no increase in throughput. This action did not increase the overall annual packaging capacity for the facility, 10 million barrels (Condition 30).

Changes to Product Marking (EU ID 29)

The facility has changed the type of inks that are used in the Product Marking Process. The inks have been changed from Videojet to Imaje inks. SDS for inks were included with the application. Condition 7 of the mNSR permit last amended on 10/5/17 requires Molson Coors to control VOC emissions from Product Marking with the use of current low VOC content product marking inks and makeup cleaners.

Monitoring and Recordkeeping

There are VOC emission limits established for all aspects of the packaging process (packaging, packaging fillers process, product marking, carton assembly, bottle label application, and defilling), which are based on the beer production/processing limits contained within the permit. The beer production/processing rate directly determines VOC emission rates. If Molson Coors does not exceed the beer production/processing limits contained in the permit, the VOC emission limits will not be violated. Recordkeeping demonstrating the total amount of beer produced/ processed each year can be used to demonstrate compliance with the VOC emission limits, satisfying the periodic monitoring requirement.

Molson Coors is required to maintain records using DEQ-approved emission factors to demonstrate compliance with the VOC limits in the permit. Actual VOC emissions from the packaging operations shall be calculated using the following equation:

$$E = TxEFx\frac{100-C}{100}$$

Where: E = VOC emission rate (lb VOC/time period)
T = Throughput to process (EUs are dependent on process)
EF = Process specific VOC emission factors as provided in the table below
C = control efficiency, as applicable (%)

Table 5: Emission Factor Sources – EU IDs 27, 29, 30, 31, and 32

Process (EU ID)	Emission Factor (EF)	EF Source	EUs
Packaging Fillers Process – Bottles (27)	2.15	Compliance Test – 12/11/14-12/12/14 at Shenandoah Brewery (Elkton, VA)	lb/1000 bbl of beer
Packaging Fillers Process – Cans (27)	9.94	Compliance Test – 12/11/14-12/12/14 at Shenandoah Brewery (Elkton, VA)	lb/1000 bbl of beer
Packaging Fillers Process – Kegs (27)	36.61	Compliance Test – 10/26/16 at Shenandoah Brewery (Elkton, VA)	lb/1000 bbl of beer
Product Marking (29)	(or as specified on most recent MSDS)	MSDS	lb/gal
Carton Assembly (30)	(or as specified on most recent MSDS)	MSDS	lb/gal
Bottle Label Application (31)	(or as specified on most recent MSDS)	MSDS	lb/gal
Defilling – Bottles (32)	0.001	Coors, Golden, CO stack test 4/32/93	lb/lb glass crushed
Defilling – Cans (32)	0.035	Coors, Golden, CO stack test 10/31/93	lb/lb aluminum shredded

Compliance Assurance Monitoring (CAM) Plan

CAM does not apply to any of the EUs in the Packaging Process, as none of the emission EUs use an add-on control device.

Testing

Bottle and Can Line Testing

Per Condition 44 of the mNSR permit last amended on October 5, 2017, a performance (stack) test is required within five years of the December 11-12, 2014 stack test at the Elkton brewery. The 2014 brewery test was conducted in order to determine the emission factors to be used in VOC emission calculations for the bottle and can lines of the Packaging Fillers Process. The results from the performance test required in Condition 44 of the mNSR permit last amended on October 5, 2017 would be used to determine the emission factor to be used in VOC emission calculations to show compliance with the emission limits in Condition 32 for the Packaging Fillers Process. The mNSR permit last amended October 5, 2017 indicates that testing can be conducted on Bottle Lines 3 or 5, and Can Lines 1, 2, or 3 to determine compliance with the emission limits in Condition 32 of the mNSR permit. These lines were not tested in the December 11 – 12, 2014 stack test; the December 2014 tests were conducted on Bottle Line 4 and Can Line 3.

The performance test on the bottle and can lines of the Packaging Fillers Process, as required by Condition 44 of the minor NSR permit last amended on October 5, 2017 was completed from December 3-4, 2019. Compliance testing was completed on Bottle Line 3 and Can Line 2 with the following results obtained:

Table 6: Performance Testing Result – Total VOC Emissions as Ethanol: Bottle Line 3 and Can Line 2 (December 3 – 4, 2019)

Average of Three Test Runs	Mass Rate (lb/hr)	Mass Rate (lb/1000 bbls)	Maximum Mass Rate (tons/month)*	Maximum Mass Rate (tons/year)
Bottle Line 3	2.65	14.61	0.97	11.60
Can Line 2	0.12	0.45	0.04	0.53

* Tons per month = tons per year divided by 12.

The December 3 – 4, 2019 performance test indicated that Bottle Line 3 and Can Line 2 were in compliance with the emission limits in Condition 32 of the October 5, 2017 mNSR permit. The annual limits were determined by multiplying the mass rate obtained (in lb/hr) by 8760 hours. The annual limits are for the entire Packaging Fillers Process (EU ID 27).

The test requirements were completed within the required five-year period. Therefore, Condition 44 of the mNSR permit as last amended on October 5, 2017 is fulfilled. As such, the mNSR Condition 44 requirements are not included in the Title V permit.
The mass emission rates (in lb/1000 bbls) calculated from the December 3 – 4, 2019 stack test differ from the current emission factors for the Packaging Fillers Process (EU ID 27). On Bottle Line 3, the mass emission rate of 14.61 lb/1000 bbls determined from the December 2019 stack test is greater than the current emission factor of 2.15 lb/1000 bbls. Alternatively, the mass

emission rate determined from the December 2019 stack test on Can Line 2 (0.45 lb/1000 bbls) is significantly less than the 9.94 lb/1000 bbls used to determine the current emission limits from EU ID 27. The Packaging Fillers Process consists of Bottle Lines 3 and 4, Aluminum Bottle Line 5, Can Lines 1, 2, 3, and 5, and the 8-Lane Centramatic Keg Line.

In the July 12, 2017 mNSR permit, current emission limits for EU ID 27 were calculated to achieve operational flexibility. This was defined as allowing the facility to increase product (can, bottle, and keg) capacity to maximum line capacity while still meeting annual emission limits. As the facility has a production limit through packaging of 10 million barrels of beer, and a 1.6 million barrel limit for the 8-Lane Centramatic Keg Line, the annual emissions from the remaining 8,400 barrels (can and bottle) were determined using the higher Can Line emission factor of 9.94 lb/1000 bbls, thereby yielding an annual emission limit of 71.04 tpy. This was a conservative calculation that allows for operational flexibility in the bottle and can line filling process. The 9.94 lb/1000 bbls emission factor was previously determined in a December 2014 stack test for Can Line #4. In using the facility maximum annual capacity of 10 million barrels of beer produced, and the emission limit of 1.6 million kegs of beer produced, the annual emission limits will not be exceeded.

In the same permitting action, the monthly maximum emissions for EU ID 27 in Condition 32 were determined based on the maximum filling capacity of the Keg Line and the Bottle Line, using the emission factors for the Keg line (36.61 lb/1000 bbls) and the Can Line (9.94 lb/1000 bbls). If the Packaging Fillers Process is operated at or below capacity, the monthly emission limits will not be exceeded.

The DEQ and the EPA have authority to conduct additional performance tests for VOC from the filler rooms of the Packaging Fillers Process - Can Lines 1, 2, or 3, and Bottle Lines 3, 4, or 5, to demonstrate compliance with the emission limits determined from the December 11-12, 2014 stack test on the bottle can lines. The DEQ and the EPA have authority to conduct additional performance tests from the filler room for the Keg Line, with emission limits determined from the October 26, 2016 stack test.

The DEQ will require performance testing for VOC from the Packaging Fillers Process - Can Line 1. This line has not been previously tested. The results of the test will be used to determine the emissions factor to be used in VOC emission calculations to show compliance with the emission limits in Condition 49 of the Title V permit.

The DEQ and the EPA also have the authority to require testing not in this permit, if necessary, to determine compliance with an emission limit or standard.

Centramatic Keg Line Testing

Condition 45 of the mNSR permit last amended on 10/5/17 requires Molson Coors to determine the emission factor to be used in VOC emission calculations to show compliance with the emission limits in Condition 32 for the Packaging Fillers Process. Condition 45 required that the performance test be conducted within five years from the date of the initial performance test on the 8-Lane Centramatic Keg Line, which took place on October 26, 2016.

The five-year test requirement on the Centramatic Keg Line drain exhaust was conducted on September 21, 2021. The results indicate an average keg line emission factor of 10.23 lb/1000 bbls. This is less than the 36.61 lb/1000 bbls emission factor that was determined from the compliance test of October 26, 2016, and upon which the emission limits established for the Packaging Fillers Process (EU 27) is partially dependent upon. The current emission limits for the Packaging Fillers Process was established in the July 12, 2017 mNSR permit.

Table 7: Performance Testing Result – VOC Emission Results as Ethanol: Centramatic Drain Exhaust Stack (September 21, 2021)

Average of Three Test Runs	Concentration (ppmvd)	Mass Rate (lb/hr)	Mass Rate (lb/1000 bbls)	Maximum Mass rate (tons/month)*	Maximum Mass Rate (tons/year)
Centramatic Keg Line	147.86	2.66	10.23	0.97	11.63

The DEQ and the EPA have authority to conduct additional performance tests from the filler room for the Keg Line, with emission limits determined from the October 26, 2016 stack test. The DEQ and the EPA also have the authority to require testing not in this permit, if necessary, to determine compliance with an emission limit or standard.

Reporting

No specific reporting has been included in the permit for the Packaging Fillers Process.

Streamlined Requirements

There are no streamlined requirements for the packaging fillers equipment.

WASTEWATER TREATMENT REQUIREMENTS – EU IDS 033 AND CHP-1

Limitations – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

EU ID 33 Limitations

Condition 10 – Requirement for EU ID 33 and influent structures to be covered to prevent escape of VOC emissions. (BACT)

Condition 11 – VOC emissions from the EU ID 33 are to be controlled by an advanced wastewater treatment system. Control of this system includes use of EU ID CHP-1 for combustion of biogas. (BACT)

Condition 36 – Approved fuel for the wastewater treatment biogas flare and EU ID CHP-1 – primary digester gas.

Condition 39 – Monthly and annual VOC emission limits from the Wastewater Collection/Treatment and Sludge Handling Systems. (BACT)

EU ID CHP-1 Limitations

Condition 12 – NOx emissions from the EU ID CHP-1 shall be controlled by a low NOx engine. (BACT)

Condition 11 – VOC emissions form the EU ID 33 are to be controlled by an advanced wastewater treatment system. Control of this system includes use of EU ID CHP-1 for combustion of biogas. (BACT)

Condition 13 – Emissions from the EU ID CHP-1 shall be controlled by proper operation and maintenance. This includes operator training, recordkeeping of training, and a maintenance schedule based on manufacturer's recommendations for CHP-1. (BACT)

Condition 36 – Approved fuel for the wastewater treatment biogas flare and EU ID CHP-1 – primary digester gas.

Condition 40 – Process emission limits for EU ID CHP-1.

Condition 41 – Hourly and annual emission limits for the EU ID CHP-1 (BACT).

Condition 42 – Visible emission limit of 10 percent opacity, except during one six-minute period in any one hour in which opacity shall not exceed 20 percent from the EU ID CHP-1.

40 CFR 60, Subpart JJJJ Requirements: The following Limitations are established for the SI ICE (EU ID CHP-1) in accordance with the NSPS, Subpart JJJJ. Condition numbers in this part refer to the Title V permit.

TV Condition 58 – Requirement to maintain EU ID CHP-1 in such a way that achieves emission standards over life of engine.

TV Condition 61 – Requirement to operate EU ID CHP-1 in compliance with the requirements of 40 CFR 60 Subpart JJJJ.

TV Condition 62 – The EU ID CHP-1 must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ)

TV Condition 63 – Non-certified engine owner, demonstrate compliance with the emission standards for EU ID CHP-1 with emission stanadrds in mNSR Condition 40. In addition, the permittee shall keep a maintenance plan and records of conducted maintenance. Maintain and operate EU ID CHP-1 in a manner consistent with good air pollution control practice for minimizing emissions.

40 CFR 63 Subpart ZZZZ Requirements – The Limitations in this part for EU ID CHP-1 refer to the Title V permit.

TV Condition 60 – Requirement to operate EU ID CHP-1 in compliance with the requirements of 40 CFR 63 Subpart ZZZZ

TV Condition 62 – The EU ID CHP-1 must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ)

EU ID 33 - Monitoring and Recordkeeping

The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

Condition 16 – The permit requires that the biogas flare be equipped with a device to ensure continuous operation of the flare. A log is required to record non-operational periods.

Condition 17 – The EU ID CHP-1 is required to have a device to continuously measure and record the biogas flow to the EU.

Condition 46 – A continuing compliance provision for the EU ID CHP-1 opacity requirements.

TV Condition 60 – Engine compliance reference from 40 CFR 63 (Subpart ZZZZ).

TV Condition 62 – The EU ID CHP-1 shall meet the requirements of MACT Subpart ZZZZ by meeting the requirements of Subpart JJJJ.

TV Condition 63 – Subpart JJJJ compliance requirements for a non-certified engine, including a maintenance plan, records of conducted maintenance, and compliance with the emission standards as required by Subpart JJJJ

EU ID CHP-1 - Monitoring and Recordkeeping

From the Title V permit:

Condition 71.a – Records to show compliance with the operator training, procedures, and maintenance for the EU ID CHP-1.

Condition 71.b – Records to show compliance with the process emission limits for EU ID CHP-1.

Condition 71.c – Monthly and annual emissions from the EU ID CHP-1.

Condition 71.f – Records of stack testing results for EU CHP-1

Condition 71.g – Monthly and annual throughput of digester gas for the EU ID CHP-1.

Condition 71.h – All notifications submitted to comply with 40 CFR 60 Subpart JJJJ and all documentation supporting any notification.

Condition 71.i – Documentation that the non-certified engine EU ID CHP-1 meets the emission standards of 40 CFR 60 Subpart JJJJ.

Monitoring and recordkeeping Conditions have been established to determine compliance with the limitations established for the EU ID CHP-1, per NSPS Subpart JJJJ, in the Wastewater Treatment Requirements section of the Title V permit. As shown above, compliance is indicated in the TV permit, with Conditions for recordkeeping demonstrating compliance with the fuel type, records of engine maintenance performed, records that indicate that the EU ID CHP-1 is a non-certified engine, and records that show that the engine emissions comply with the process emission standards of the governing Subpart JJJJ. These records satisfy the Part 70 periodic monitoring requirements to ensure that the permit necessitates compliance with the applicable requirements.

Compliance assurance for the engine EU ID CHP-1 requires a performance (stack) test for VOC, NOx, and CO while firing digester gas (biogas), as discussed in "Testing". This testing assures engine compliance with the engine emission standards as listed in Subpart JJJJ. Specific

monitoring changes are listed under Monitoring and Recordkeeping.

No other changes are made to the monitoring conditions. Compliance determination using a monthly demonstration is done by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months.

EU ID 33 - Monitoring and Recordkeeping

TV Condition 71.d.	–	Monthly and annual VOC emissions (in tons), from the wastewater collection / treatment and sludge handling system.
TV Condition 71.e.	–	Maintenance of a log to record any period when the biogas flare is non-operational.

The permit requires Molson Coors to operate a biogas flare to control VOC emissions from the wastewater treatment facility. The flare must be equipped with a monitoring device to ensure continuous operation, as well as an automatic shutoff device and re-ignition controls. This device will satisfy the periodic monitoring requirement for operation of the biogas flare.

There are VOC emission limits established for the wastewater collection/treatment and sludge handling systems, which are based on the beer production/processing limits contained within the permit, and the operation of the biogas flare. The beer waste rate, which at worst case is all of the beer that can be produced/processed directly, determines VOC emission rates. Therefore, as long as the biogas flare is operating and the beer production/processing limit is not violated, there is very little chance that the VOC emission limits will be violated. Recordkeeping demonstrating the total amount of beer wasted each year can be used to demonstrate compliance with the VOC emission limits, satisfying the periodic monitoring requirement.

The two biogas-fired boilers (EU IDs 34 and 35) operate on demand and are used to heat the waste waters to enhance biological activity and treatment, which leads to the combustion of excess biogas. Thus, the EUs are utilized as a pollution control device for the waste water treatment plant. Per a November 6, 1996 letter from the EPA, the biogas boilers are not to be considered as fossil fueled boilers. They have no requirements, but are removed from the Insignificant Emission Unit List.

Condition 17 of the mNSR permit requires the facility to continuously measure and record monthly, and annually, the biogas flow to the EU ID CHP-1 via a device. Molson Coors currently does use flow meters on the flare, although it is not required by the permit.

Molson Coors is required to maintain records using DEQ-approved emission factors to demonstrate compliance with the VOC limits in the permit. Actual emissions from the wastewater treatment system operations shall be calculated using the following equation:

$$E = F \times N$$

Where: E = emission rate (lb/time period)
F = pollutant specific emission factor
N = throughput/time period

Table 7: Emission Factors – EU ID 33 (Collection System, Primary Treatment, Biogas Flare, Secondary Treatment System)

Process	Pollutant	Emission Factor	EF Units	EF Source
Collection System	VOC	3.75	lb/MG	Facility-provided emission factor based on process knowledge.
Primary Treatment	H_2S	0.029	lb/Million Btu	
Biogas Flare	PM	0.14	lb/Million Btu	AP-42, Section 13.5 (5th ed.)
	CO	0.37	lb/Million Btu	
	NO_X	0.068	lb/Million Btu	
	SO_2	0.05	lb/Million Btu	Facility-provided emission factor based on process knowledge.
Secondary Treatment	VOC	6.42	lb/MG	Facility-provided emission factor based on process knowledge.

Compliance Assurance Monitoring (CAM) Plan

CAM does not apply to any of the Wastewater Treatment EUs, as none of the emission units has potential pre-control emissions for any pollutant that exceed major source thresholds.

Testing

NSR Condition 47 – Continuous compliance, as needed, for VEE from the EU ID CHP-1.

TV Condition 72 – Testing requirements for the EU ID CHP-1.

TV Condition 73 – Testing procedures for the EU ID CHP-1.

TV Condition 74 – Additional testing shall be done in accordance with procedures outlined by the DEQ.

The permit does not require source tests for the wastewater treatment system, other than the testing necessary for the EU ID CHP-1, which includes continuous compliance requirements for VEE and for determination of emission standard compliance.

Condition 72 of the Title V permit requires initial and subsequent testing of the EU ID CHP-1 to determine compliance with the mass emission or concentration standards stated in Condition 40 (in g/HP-hr or ppmvd at 15 percent O_2) of the mNSR permit last amended on 10/5/17 (and Condition 56 of the Title V permit) for the EU ID CHP-1 engine-generator.

The initial test of the EU ID CHP-1 was conducted on April 22, 2014. Subsequent testing is

required every 8760 hours, or every three years, whichever comes first. Table 8 lists the performance test dates beginning with the April 22, 2014 date, and the results of the testing. VOC emissions are indicated as propane. As shown in Table 8, all tests run indicate compliance with the emission standards of 40CFR60.4243, which are listed in the mNSR permit (Condition 40) and the Title V permit (Condition 57).

Table 8: Performance Test Dates and Results (EU ID CHP-1)

Emission Standards				
	NOx 2.0 g/HP-hr or 150 ppmvd at 15% O_2	CO 5.0 g/HP-hr or 610 ppmvd at 15% O_2	VOC 1.0 g/HP-hr or 80 ppmvd at 15% O_2	
Date	Results			In Compliance?
4/22/14 (Initial)	0.57 g/HP-hr - 40.22 ppmvd at 15% O_2	2.54 g/HP-hr - 296.97 ppmvd at 15% O_2	0.20 g/HP-hr - 14.51 ppmvd at 15% O_2	Yes
2/22/17	0.80 g/HP-hr - 59.94 ppmvd at 15% O_2	1.96 g/HP-hr - 242.81 ppmvd at 15% O_2	0.02 g/HP-hr - 1.70 ppmvd at 15% O_2	Yes
9/12/18 and 9/13/18	1.43 g/HP-hr - 129.99 ppmvd @ 15% O_2	1.61 g/HP-hr - 241.54 ppmvd@ 15% O_2	0.08 g/HP-hr - 7.25 ppmvd at 15% O_2	Yes
9/16/20	1.30 g/HP-hr - 104.44 ppmvd at 15% O_2	1.92 g/HP-hr - 254.51 ppmvd at 15% O_2	0.03 g/HP-hr - 2.34 ppmvd at 15% O_2	Yes
11/23/21	0.76 g/HP-hr - 84.66 ppmvd at 15% O_2	1.37 g/HP-hr - 249.06 ppmvd at 15% O_2	0.02 g/HP-hr - 2.23 ppmvd at 15% O_2	Yes

The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Testing is required of the EU ID CHP-1, as needed to ensure compliance with the visible emission limit in Condition 42 of the minor NSR permit, as last amended on 10/5/17.

Reporting

Reporting, an initial notification for the EU ID CHP-1 is required by 40 CFR 60.7(a)(1). The reporting requirement has been removed from the Title V permit; it has been fulfilled.

Streamlined Requirements

Two requirements are streamlined:

-The initial notification requirement for the EU ID CHP-1 as required by 40 CFR 60.7(a)(1), has been removed as the requirement has been fulfilled.

-Condition 72, the portion which originally stated that "Within three years of the initial performance test conducted on April 22, 2014", is removed as that portion of Condition 72 has already been fulfilled.

There are no other streamlined requirements for the Wastewater Treatment EUs.

EU ID 16 – Removed from TV Permit

The lime storage and handling system has been removed from the facility. The following mNSR limitations for EU ID 16, as last amended on 10/5/17, have been *removed* from the current Title V permit:

Condition 4	–	Particulate matter emissions (PM and PM-10) from the operation of the lime storage and handling system (EU ID 16) shall be controlled by a bin vent filter. (BACT)
Condition 37	–	Annual throughput limit for lime. (BACT)
Condition 38	–	Annual PM and PM-10 emission limits from the Lime Storage and Handling System (EU ID 16). (BACT)
Condition 43	–	Visible emission limit of five percent opacity from the lime storage silo bin vent filter. (BACT)

The following mNSR monitoring requirement for EU ID 16, as last amended on 10/5/17, have been *removed* from the current Title V permit:

Condition 18	–	All bin vent filters are required to be equipped with a device to continuously measure the differential pressure across the filter.

FACILITY WIDE REQUIREMENTS

The following requirements are from the minor new source review permit issued on 6/10/11 Permit as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. The condition numbers reflect those in the minor NSR permit. A copy of the minor NSR permit is attached as *Attachment C*.

Condition 35	–	PSD applicability
Condition 56	–	Maintenance and Operating Procedures shall be implemented to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment, including: development of a maintenance schedule, an inventory of spare parts shall be maintained, written equipment operating procedures will be available, and employees shall be trained in the proper operation of the equipment. This requirement is listed separately for the EU ID CHP-1 in Condition 13 of the minor NSR permit dated 6/10/11 as amended 11/18/13, 2/3/16, 7/12/17, and 10/5/17. This was established as BACT for said engine-generator when the EU was considered for minor new source review permitting by the DEQ.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation[1] (9VAC)	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
19	Diesel Fuel Storage	9 VAC 5-80-720 A	--	--
36	Wet Spent Grain Storage and Loadout	9 VAC 5-80-720 B	VOC	--
37	Adjuncts Handling	9 VAC 5-80-720 B	PM-10	--
40	Emergency Back-up Generator	9 VAC 5-80-720 B	-	NOx, CO
51	Yeast Propagation	9 VAC 5-80-720 B	VOC, SO_2	--
52	Cooling Towers	9 VAC 5-80-720 A	--	--
53	Deozonation Towers	9 VAC 5-80-720 B	VOC (ozone)	--
54	Packaging Traymaker	9 VAC 5-80-720 B	PM-10, VOC	--
55	CIP (Clean-in-Place) System	9 VAC 5-80-720 B	VOC	--
56	Hops Staging Room	9 VAC 5-80-720 B	VOC	--
57	Inline Defill EUs – Bottle Line 3	9 VAC 5-80-720 B	VOC	--
58	Warehouse Keg Defill	9 VAC 5-80-720 B	VOC	--
59	Keg Line Defill	9 VAC 5-80-720 B	VOC	--
60	Five-liter Keg Can Filling	9 VAC 5-80-720 B	VOC	--
61	Bottle Warmer	9 VAC 5-80-720 B	VOC	--
62	Flash Pasteurization	9 VAC 5-80-720 B	VOC	--
63	Central Vacuum System	9 VAC 5-80-720 B	PM, PM-10, VOC	--
64	Green Beer Centrifuges	9 VAC 5-80-720 B	VOC	--
65	Portable Gasoline Generators	9 VAC 5-80-720 B	VOC, NOx, CO	--
66	Parts Washers	9 VAC 5-80-720 B	VOC	
--	Rail and Truck Loading	9 VAC 5-80-720 A		
--	General Ventilation	9 VAC 5-80-720 A	--	--
--	Portable Heaters	9 VAC 5-80-720 A	--	--
--	Space Heaters	9 VAC 5-80-720 A	--	--
--	Office Activities	9 VAC 5-80-720 A	--	--
--	Janitorial Cleaning/Maintenance	9 VAC 5-80-720 A	--	--
--	Architectural Repair Activities	9 VAC 5-80-720 A	--	--
--	Grounds Maintenance	9 VAC 5-80-720 A	--	--
--	Locker Room Ventilation	9 VAC 5-80-720 A	--	--
--	Copier Activities	9 VAC 5-80-720 A	--	--
--	Blueprint Duplication	9 VAC 5-80-720 A	--	--
--	Cafeteria Activities	9 VAC 5-80-720 A	--	--
--	Safety Devices	9 VAC 5-80-720 A	--	--
--	Air Contaminate Test Equipment	9 VAC 5-80-720 A	--	--
--	Welding, Soldering Equipment	9 VAC 5-80-720 A	--	--

Emission Unit No.	Emission Unit Description	Citation[1] (9VAC)	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
--	Forklift, Truck Engines	9 VAC 5-80-720 A	--	--
--	Firefighting Equipment and Training	9 VAC 5-80-720 A	--	--
--	Quality Control Lab Activities	9 VAC 5-80-720 A	--	--
--	Air Compressors	9 VAC 5-80-720 A	--	--
--	Dumpsters	9 VAC 5-80-720 A	--	--
--	Air Dryers for Instrument Air	9 VAC 5-80-720 A	--	--
--	Laboratory Activities	9 VAC 5-80-720 A	--	--
--	Sampling Activities	9 VAC 5-80-720 A	--	--
--	Solvent Storage	9 VAC 5-80-720 A	--	--
--	Cooling Ponds	9 VAC 5-80-720 A	--	--
--	Maintenance Activities	9 VAC 5-80-720 A	--	--
--	Spill Collection Tanks	9 VAC 5-80-720 A	--	--
--	Steam Vents	9 VAC 5-80-720 A	--	--
--	Boiler Treatment Operations	9 VAC 5-80-720 A	--	--
--	Nonhazardous Boiler Cleaning Activities	9 VAC 5-80-720 A	--	--
--	Portable Containers	9 VAC 5-80-720 A	--	--
--	Vents or Stacks for Sewer Lines	9 VAC 5-80-720 A	--	--
--	Fire Suppression Systems	9 VAC 5-80-720 A	--	--

[1]The citation criteria for insignificant activities are as follows:
9VAC5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application
9VAC5-80-720 B - Insignificant due to emission levels
9VAC5-80-720 C - Insignificant due to size or production rate

GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting

semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

Comments on General Conditions:

Federal Enforceability

Article 1 (9VAC5-80-110 N) states that all terms and conditions in the Title V permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.

Permit Expiration

This Condition refers to the Board taking action on a permit application. The "Board" is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-09".

This general condition cites the Article that follows:

Article 1 (9VAC5-80-50 et seq.), Part II of 9VAC5 Chapter 80. Federal Operating Permits for Stationary Sources
This general condition cites the sections that follow:

9 VAC 5-80-80. Application
9 VAC 5-80-140. Permit Shield
9 VAC 5-80-150. Action on Permit Applications

Failure, Malfunction Reporting

Section 9VAC5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9VAC5-20-180 is from the general regulations. All affected facilities are subject to section 9VAC5-20-180 including Title V facilities. A facility may make a single report that meets the requirements of 9VAC5-20-180. The report must be made within four daytime business hours of discovery of the malfunction.

In order for emission EUs to be relieved from the requirement to make a written report in 14 days the emission EUs must have continuous monitors meeting the requirements of 9VAC5-50-410 or 9VAC5-40-41.

These general Conditions cite the sections that follow:

9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources
9 VAC 5-40-50. Notification, Records and Reporting
9 VAC 5-50-50. Notification, Records and Reporting

This general condition contains a citation from the Code of Federal Regulations as follows:
40 CFR 60.13 (h). Monitoring Requirements.

Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit for Stationary Sources
9 VAC 5-80-190. Changes to Permits.
9 VAC 5-80-260. Enforcement.
9 VAC 5-80-1100. Applicability, Permits for New and Modified Stationary Sources
9 VAC 5-80-1605. Applicability, Permits for Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas
9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Locating in Nonattainment Areas

Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

This general condition contains a citation from the Code of Federal Regulations that follow:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.
40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.
40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

9 VAC 5-60-70. Designated Emissions Standards
9 VAC 5-80-110. Permit Content

STATE ONLY APPLICABLE REQUIREMENTS

Molson Coors did not identify any state-only enforceable requirements in the Title V renewal application, and all requirements in the state operating permit are federally enforceable. Therefore, no state-only applicable requirements have been included in the Title V permit.

FUTURE APPLICABLE REQUIREMENTS

Molson Coors did not identify any future applicable requirements in the renewal application.

CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

PUBLIC PARTICIPATION

The proposed permit will be placed on public notice from February 23, 2022 to March 25, 2022. The notice will be published in *The Daily News Record* newspaper on February 23, 2022.

ATTACHMENTS

A – EU ID 10 Fabric Filters CAM Plan
B – 2020 Emissions Inventory
C – Minor NSR Permit - June 10, 2011, as amended November 18, 2013, February 3, 2016, and July 12, 2017, and October 5, 2017.
D – Engineering Analysis to minor NSR permit - June 10, 2011, as amended November 18, 2013, February 3, 2016, July 12, 2017, and October 5, 2017.

ATTACHMENT A

EU ID 10 FABRIC FILTER CAM PLAN

ATTACHMENT B

2020 EMISSIONS INVENTORY

ATTACHMENT C

MINOR NSR PERMIT

June 10, 2011 as amended November 18, 2013, February 3, 2016, July 12, 2017, and October 5, 2017.

ATTACHMENT D

ENGINEERING ANALYSIS to MINOR NSR PERMIT

June 10, 2011 as amended November 18, 2013, February 3, 2016, July 12, 2017, and October 5, 2017.